Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-32. (Canceled)

Claim 33. (New): A method for improving tolerance in a patient to a graft from a mismatched donor without thymus reactivation, comprising:

depleting immune cells of the patient;

disrupting sex steroid-mediated signaling in the patient; and

administering cells from the donor to the patient, the cells being selected from the group consisting of stem cells, progenitor cells, and combinations thereof,

wherein the patient has increased tolerance to the donor graft without thymus reactivation compared to an untreated patient.

Claim 34. (New): The method of claim 33, wherein the thymus of the patient is at least in part atrophied.

Claim 35. (New): The method of claim 34, wherein the patient has a disease that at least in part atrophied the thymus of the patient.

Claim 36. (New): The method of claim 34, wherein the patient has had a treatment of a disease that at least in part atrophied the thymus of the patient.

Claim 37. (New): The method of claim 36, wherein the treatment of the disease is immunosuppression, chemotherapy, or radiation treatment.

Claim 38. (New): The method of claim 33, wherein the stem cells are selected from the group consisting of hematopoietic stem cells, epithelial stem cells, and combinations thereof.

Claim 39. (New): The method of claim 33, wherein the progenitor cells are selected from the group consisting of lymphoid progenitor cells, myeloid progenitor cells, and combinations thereof.

Claim 40. (New): The method of claim 33, wherein the cells are hematopoietic stem cells.

Claim 41. (New): The method of claim 38, wherein the hematopoietic stem cells are $CD34^+$.

Claim 42. (New): The method of claim 33, wherein the cells are administered at the time disruption of sex steroid-mediated signaling is begun.

Claim 43. (New): The method of claim 33, further comprising administering to the patient a substance selected from the group consisting of a cytokine, a hematopoietin, a lymphokine, a interleukin, a CSF, a growth factor, and a combination thereof.

Claim 44. (New): The method of claim 43, wherein the cytokine is selected from the group consisting of Interleukin 1 (IL-1), Interleukin 2 (IL-2), Interleukin 3 (IL-3), Interleukin 4 (IL-4), Interleukin 5 (IL-5), Interleukin 6 (IL-6), Interleukin 7 (IL-7), Interleukin 8 (IL-8), Interleukin 9 (IL-9), Interleukin 10 (IL-10), Interleukin 11 (IL-11), Interleukin 12 (IL-12), Interleukin 13 (IL-13), Interleukin 15 (IL-15), Interferon gamma (IFN-γ), and combinations thereof.

Claim 45. (New): The method of claim 43, wherein the growth factor is selected from the group consisting of members of the epithelial growth factor family, members of the fibroblast growth factor family, stem cell factor, granulocyte colony stimulating factor (G-CSF), keratinocyte growth factor (KGF), granulocyte-macrophage colony stimulating factor (GM-CSF), insulin-like growth factor-1 (IGF-1), a growth hormone, a thyroid hormone, M-CSF, Meg-CSF, MIF, LIF, TNF, PDGF, human growth hormone, B cell growth factor, B cell differentiation factor, eosinophil differentiation factor, and combinations thereof.

Claim 46. (New): The method of claim 33, wherein the sex steroid-mediated signaling is disrupted by surgical castration or chemical castration.

Claim 47. (New): The method of claim 33, wherein the sex steroid-mediated signaling is disrupted by administration of a pharmaceutical.

Claim 48. (New): The method of claim 47, wherein the pharmaceutical is selected from the group consisting of an LHRH agonist, an LHRH antagonist, an anti-LHRH vaccine, an anti-androgen, an anti-estrogen, a SERM, a SARM, a SPRM, an ERD, an aromatase inhibitor, an adrenal gland blocker, an aldosterone antagonist, an

antiprogestogen, a progestin, an antiprogestin, a dioxalan derivative, and combinations thereof.

Claim 49. (New): The method of claim 48, wherein the LHRH agonist is selected from the group consisting of goserelin, leuprolide, lupron, triptorelin, meterelin, buserelin, histrelin, nafarelin, lutrelin, leuprorelin, deslorelin, cystorelin, decapeptyl, gonadorelin, and acetates, citrates and other salts thereof, and combinations thereof.

Claim 50. (New): The method of claim 48, wherein the LHRH antagonist is selected from the group consisting of abarelix, cetrorelix, acetates, citrates, and other salts thereof, and combinations thereof.

Claim 51. (New): The method of claim 48, wherein the anti-androgen is selected from the group consisting of Cosudex®, bicalutamide, cyproterone acetate, liarozole, ketoconazole, flutamide, megestrol acetate, dutasteride, finasteride, eulexin, and combinations thereof.

Claim 52. (New): The method of claim 48, wherein the anti-estrogen is selected from the group consisting of anastrozole, fulvestrant, tamoxifen, clomiphene, diethylstilbestrol, diethylstilbestrol diphosphate, danazol, droloxifene, iodoxyfene, toremifene, raloxofene, and combinations thereof.

Claim 53. (New): The method of claim 48, wherein the adrenal gland blocker is selected from the group consisting of aminoglutethimide, formestane, vorazole, exemestane, anastrozole, letrozole, exemestane, and combinations thereof.

Claim 54. (New): The method of claim 33, wherein the donor graft is selected from the group consisting of a cell of the donor, a tissue of the donor, an organ of the donor, and combinations thereof.

Claim 55. (New): The method of claim 33, wherein the sex steroid-mediated signaling to the thymus is disrupted by reducing the level of a sex steroid hormone.

Claim 56. (New): The method of claim 33, where the cells from the mismatched donor are genetically modified.

Claim 57. (New): The method of claim 33, wherein the method results in the generation of a chimera selected from the group consisting of a chimeric thymus, a chimeric hemopoietic cell population, a chimeric lymphoid cell population, a chimeric T cell population, a chimeric B cell population, a chimeric dendritic cell population, a chimeric lymphoid organ, and any combination thereof.

Claim 58. (New): The method of claim 33, further comprising an allograft transplant having the same histocompatibility as that of the mismatched donor to the patient.

Claim 59. (New): The method of claim 33, wherein tolerance is induced by at least one of: enhancing bone marrow hemopoiesis; enhancing bone marrow functionality; enhancing engraftment of donor cells in bone marrow; and increasing functionality of the patient's pre-existing immune cells.

Claim 60. (New): A method for increasing the number of, or enhancing the mobilization of, hemopoietic stem cells in a donor, comprising disrupting sex steroid-

mediated signaling in the donor prior to isolating hemopoietic stem cells, blood cells, and/or bone marrow from the donor.

Claim 61. (New): The method of claim 60, further comprising administering to the donor an HSC mobilizing agent selected from the group consisting of cytokines, GM-CSF, G-CSF, CSF, chemotherapeutics, cyclophosphamide, flt-3 ligand, KGF/FGF7, other members of the FGF family, and IL-7.

Claim 62. (New): The method of claim 60, wherein the sex steroid-mediated signaling is disrupted by surgical castration, or chemical castration.

Claim 63. (New): The method of claim 60, wherein the sex steroid-mediated signaling is disrupted by administration of a pharmaceutical.

Claim 64. (New): The method of claim 60, wherein the pharmaceutical is selected from the group consisting of an LHRH agonist, an LHRH antagonist, an anti-LHRH vaccine, an anti-androgen, an anti-estrogen, a SERM, a SARM, a SPRM, an ERD, an aromatase inhibitor, an adrenal gland blocker, an aldosterone antagonist, an antiprogestogen, a progestin, an antiprogestin, a dioxalan derivative, and combinations thereof.

Claim 65. (New): The method of claim 64, wherein the LHRH agonist is selected from the group consisting of goserelin, leuprolide, lupron, triptorelin, meterelin, buserelin, histrelin, nafarelin, lutrelin, leuprorelin, deslorelin, cystorelin, decapeptyl, gonadorelin, and acetates, citrates and other salts thereof, and combinations thereof.

Claim 66. (New): The method of claim 64, wherein the LHRH antagonist is selected from the group consisting of abarelix, cetrorelix, acetates, citrates, and other salts thereof, and combinations thereof.

Claim 67. (New): The method of claim 64, wherein the anti-androgen is selected from the group consisting of Cosudex®, bicalutamide, cyproterone acetate, liarozole, ketoconazole, flutamide, megestrol acetate, dutasteride, finasteride, eulexin, and combinations thereof.

Claim 68. (New): The method of claim 64, wherein the anti-estrogen is selected from the group consisting of anastrozole, fulvestrant, tamoxifen, clomiphene, diethylstilbestrol, diethylstilbestrol diphosphate, danazol, droloxifene, iodoxyfene, toremifene, raloxofene, and combinations thereof.

Claim 69. (New): The method of claim 64, wherein the adrenal gland blocker is selected from the group consisting of aminoglutethimide, formestane, vorazole, exemestane, anastrozole, letrozole, exemestane, and combinations thereof.

Claim 70. (New): The method of claim 60, wherein the sex steroid-mediated signaling to the thymus is disrupted by reducing the level of a sex steroid hormone.